

SEQUENCE LISTING

<110> Fernandez-Salas, Ester
 Garay, Patton
 Aoki, Kei Roger

<120> Botulinum Toxin Screening Assays

<130> 17596 (BOT)

<150> US 60/547,591

<151> 2004-02-24

<160> 32

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 2427

<212> DNA

<213> Homo sapiens FGFR3IIIb

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<210> 2
<211> 808
<212> PRT
<213> Homo sapiens FGFR3IIIb

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  35          40          45
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
  50          55          60
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
  65          70          75          80
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
          85          90          95
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
          100         105         110
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala

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Phe	His	Cys	Lys	Val	Tyr	Ser	Asp	Ala	Gln	Pro	His	Ile	Gln	Trp	Leu
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Leu	Ser	Val	His	Gly	Pro	Arg	Ala	Ala	Glu	Glu	Glu	Leu	Val	Glu	Ala
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Arg	Ser	Pro	Pro	Lys	Lys	Gly	Leu	Gly	Ser	Pro	Thr	Val	His	Lys	Ile
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Ser	Arg	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	Ala	Ser
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Glu	Gly	Pro	Thr	Leu	Ala	Asn	Val	Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp
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<210> 3
<211> 2421
<212> DNA
<213> Homo sapiens FGFR3IIIC

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<210> 4

<211> 806

<212> PRT

<213> Homo sapiens FGFR3IIIC

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          20          25          30
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          35          40          45
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
 50          55          60
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
65          70          75          80
Leu Val Pro Ser Glu Arg Val Leu Val Gly Pro Gln Arg Leu Gln Val
          85          90          95
Leu Asn Ala Ser His Glu Asp Ser Gly Ala Tyr Ser Cys Arg Gln Arg
          100          105          110
Leu Thr Gln Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala
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Pro Ser Ser Gly Asp Asp Glu Asp Gly Glu Asp Glu Ala Glu Asp Thr
130          135          140
Gly Val Asp Thr Gly Ala Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp
145          150          155          160
Lys Lys Leu Leu Ala Val Pro Ala Ala Asn Thr Val Arg Phe Arg Cys
          165          170          175
Pro Ala Ala Gly Asn Pro Thr Pro Ser Ile Ser Trp Leu Lys Asn Gly
          180          185          190
Arg Glu Phe Arg Gly Glu His Arg Ile Gly Gly Ile Lys Leu Arg His
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Gln Gln Trp Ser Leu Val Met Glu Ser Val Val Pro Ser Asp Arg Gly
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225          230          235          240
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          245          250          255
Ala Gly Leu Pro Ala Asn Gln Thr Ala Val Leu Gly Ser Asp Val Glu
          260          265          270
Phe His Cys Lys Val Tyr Ser Asp Ala Gln Pro His Ile Gln Trp Leu
          275          280          285
Lys His Val Glu Val Asn Gly Ser Lys Val Gly Pro Asp Gly Thr Pro
290          295          300
Tyr Val Thr Val Leu Lys Thr Ala Gly Ala Asn Thr Thr Asp Lys Glu
305          310          315          320
Leu Glu Val Leu Ser Leu His Asn Val Thr Phe Glu Asp Ala Gly Glu
          325          330          335
Tyr Thr Cys Leu Ala Gly Asn Ser Ile Gly Phe Ser His His Ser Ala
          340          345          350
Trp Leu Val Val Leu Pro Ala Glu Glu Leu Val Glu Ala Asp Glu
          355          360          365
Ala Gly Ser Val Tyr Ala Gly Ile Leu Ser Tyr Gly Val Gly Phe Phe
          370          375          380
Leu Phe Ile Leu Val Val Ala Ala Val Thr Leu Cys Arg Leu Arg Ser
385          390          395          400
Pro Pro Lys Lys Gly Leu Gly Ser Pro Thr Val His Lys Ile Ser Arg
          405          410          415
Phe Pro Leu Lys Arg Gln Val Ser Leu Glu Ser Asn Ala Ser Met Ser
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Ser Asn Thr Pro Leu Val Arg Ile Ala Arg Leu Ser Ser Gly Glu Gly

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Asp	Ala	Thr	Asp	Lys	Asp	Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	Glu	Met
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Cys	Thr	Gln	Gly	Gly	Pro	Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala	Ala	Lys
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Gly	Asn	Leu	Arg	Glu	Phe	Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	Leu	Asp
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Tyr	Ser	Phe	Asp	Thr	Cys	Lys	Pro	Pro	Glu	Glu	Gln	Leu	Thr	Phe	Lys
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Asp	Leu	Val	Ser	Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Glu	Tyr	Leu
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Ala	Ser	Gln	Lys	Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu
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Asp	Val	His	Asn	Leu	Asp	Tyr	Tyr	Lys	Lys	Thr	Thr	Asn	Gly	Arg	Leu
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Pro	Val	Lys	Trp	Met	Ala	Pro	Glu	Ala	Leu	Phe	Asp	Arg	Val	Tyr	Thr
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His	Gln	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu	Ile	Phe
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Gln	Arg	Pro	Thr	Phe	Lys	Gln	Leu	Val	Glu	Asp	Leu	Asp	Arg	Val	Leu
			740					745					750		
Thr	Val	Thr	Ser	Thr	Asp	Glu	Tyr	Leu	Asp	Leu	Ser	Ala	Pro	Phe	Glu
		755				760						765			
Gln	Tyr	Ser	Pro	Gly	Gly	Gln	Asp	Thr	Pro	Ser	Ser	Ser	Ser	Ser	Gly
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Asp	Asp	Ser	Val	Phe	Ala	His	Asp	Leu	Leu	Pro	Pro	Ala	Pro	Pro	Ser
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<211> 2085

<212> DNA

<213> Homo sapiens FGFR3IIIS

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<210> 6

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<212> PRT

<213> Homo sapiens FGFR3IIIS

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 35           40           45
Leu Val Phe Gly Ser Gly Asp Ala Val Glu Leu Ser Cys Pro Pro Pro
 50           55           60
Gly Gly Gly Pro Met Gly Pro Thr Val Trp Val Lys Asp Gly Thr Gly
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Ala	Cys	Arg	Leu	Pro	Glu	Glu	Gln	Leu	Thr	Cys	Lys	Asp	Leu	Val	Ser			
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Cys	Ala	Tyr	Gln	Val	Ala	Arg	Gly	Met	Glu	Tyr	Leu	Ala	Ser	Gln	Lys			
		595					600					605						
Cys	Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Val	Leu	Val	Thr	Glu	Asp			
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<212> DNA
<213> Mus musculus FGFR3IIIc
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<211> 800

<212> PRT

<213> Mus musculus FGFR3IIIC

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			20					25					30		
Ala	Ala	Glu	Val	Pro	Gly	Pro	Glu	Pro	Ser	Gln	Gln	Glu	Gln	Val	Ala
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Phe	Gly	Ser	Gly	Asp	Thr	Val	Glu	Leu	Ser	Cys	His	Pro	Pro	Gly	Gly
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Arg	Arg	Val	Leu	Cys	His	Phe	Ser	Val	Arg	Val	Thr	Asp	Ala	Pro	Ser
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Ser	Gly	Asp	Asp	Glu	Asp	Gly	Glu	Asp	Val	Ala	Glu	Asp	Thr	Gly	Ala
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Pro	Tyr	Trp	Thr	Arg	Pro	Glu	Arg	Met	Asp	Lys	Lys	Leu	Leu	Ala	Val

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Pro	Ala	Ala	Asn	Thr	Val	Arg	Phe	Arg	Cys	Pro	Ala	Ala	Gly	Asn
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Thr	Pro	Ser	Ile	Ser	Trp	Leu	Lys	Asn	Gly	Lys	Glu	Phe	Arg	Gly
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His	Arg	Ile	Gly	Gly	Ile	Lys	Leu	Arg	His	Gln	Gln	Trp	Ser	Leu
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Glu	Asn	Lys	Phe	Gly	Ser	Ile	Arg	Gln	Thr	Tyr	Thr	Leu	Asp	Val
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Glu	Arg	Ser	Pro	His	Arg	Pro	Ile	Leu	Gln	Ala	Gly	Leu	Pro	Ala
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Gly	Ser	Lys	Val	Gly	Pro	Asp	Gly	Thr	Pro	Tyr	Val	Thr	Val	Leu
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His	Asn	Val	Thr	Phe	Glu	Asp	Ala	Gly	Glu	Tyr	Thr	Cys	Leu	Ala
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Asn	Ser	Ile	Gly	Phe	Ser	His	His	Ser	Ala	Trp	Leu	Val	Val	Leu
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Gly	Val	Leu	Ser	Tyr	Gly	Val	Val	Phe	Phe	Leu	Phe	Ile	Leu	Val
	370				375					380				Val
Ala	Ala	Val	Ile	Leu	Cys	Arg	Leu	Arg	Ser	Pro	Pro	Lys	Lys	Gly
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Gly	Ser	Pro	Thr	Val	His	Lys	Val	Ser	Arg	Phe	Pro	Leu	Lys	Arg
				405					410				415	Gln
Val	Ser	Leu	Glu	Ser	Asn	Ser	Ser	Met	Asn	Ser	Asn	Thr	Pro	Leu
		420						425				430		Val
Arg	Ile	Ala	Arg	Leu	Ser	Ser	Gly	Glu	Gly	Pro	Val	Leu	Ala	Asn
	435						440					445		Val
Ser	Glu	Leu	Glu	Leu	Pro	Ala	Asp	Pro	Lys	Trp	Glu	Leu	Ser	Arg
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Arg	Leu	Thr	Leu	Gly	Lys	Pro	Leu	Gly	Glu	Gly	Cys	Phe	Gly	Gln
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Val	Met	Ala	Glu	Ala	Ile	Gly	Ile	Asp	Lys	Asp	Arg	Thr	Ala	Lys
			485					490					495	Pro
Val	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Asp	Asp	Ala	Thr	Asp	Lys
	500						505					510		Asp
Leu	Ser	Asp	Leu	Val	Ser	Glu	Met	Glu	Met	Met	Lys	Met	Ile	Gly
	515					520					525			Lys
His	Lys	Asn	Ile	Ile	Asn	Leu	Leu	Gly	Ala	Cys	Thr	Gln	Gly	Gly
	530				535					540				Pro
Leu	Tyr	Val	Leu	Val	Glu	Tyr	Ala	Ala	Lys	Gly	Asn	Leu	Arg	Glu
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Leu	Arg	Ala	Arg	Arg	Pro	Pro	Gly	Met	Asp	Tyr	Ser	Phe	Asp	Ala
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Arg	Leu	Pro	Glu	Gln	Leu	Thr	Cys	Lys	Asp	Leu	Val	Ser	Cys	Ala
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<211> 2349
<212> DNA
<213> Mus musculus FGFR3III-delAcid
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1140							

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<210> 14

<211> 782

<212> PRT

<213> Mus musculus FGFR3III-delAcid

<400> 14

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Ala Ala Glu Val Pro Gly Pro Glu Pro Ser Gln Gln Glu Gln Val Ala
          35             40             45
Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly

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Ala Ser His Glu Asp Ala Gly Val Tyr Ser Cys Gln His Arg Leu Thr		
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Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Gly Ala Pro Tyr		
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Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val Pro Ala		
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Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro Thr Pro		
145	150	155
Ser Ile Ser Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu His Arg		
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Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val Met Glu		
	180	185
Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val Glu Asn		
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Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu Glu Arg		
	210	215
Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn Gln Thr		
225	230	235
Ala Ile Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr Ser Asp		
	245	250
Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn Gly Ser		
	260	265
Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys Thr Ala		
	275	280
Gly Ala Asn Thr Thr Asp Lys Glu Leu Glu Val Leu Ser Leu His Asn		
	290	295
Val Thr Phe Glu Asp Ala Gly Glu Tyr Thr Cys Leu Ala Gly Asn Ser		
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Glu Glu Leu Met Glu Thr Asp Glu Ala Gly Ser Val Tyr Ala Gly Val		
	340	345
Leu Ser Tyr Gly Val Val Phe Phe Leu Phe Ile Leu Val Val Ala Ala		
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Val Ile Leu Cys Arg Leu Arg Ser Pro Pro Lys Lys Gly Leu Gly Ser		
	370	375
Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys Arg Gln Val Ser		
385	390	395
Leu Glu Ser Asn Ser Ser Met Asn Ser Asn Thr Pro Leu Val Arg Ile		
	405	410
Ala Arg Leu Ser Ser Gly Glu Gly Pro Val Leu Ala Asn Val Ser Glu		
	420	425
Leu Glu Leu Pro Ala Asp Pro Lys Trp Glu Leu Ser Arg Thr Arg Leu		
	435	440
Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly Gln Val Val Met		
	450	455
Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala Lys Pro Val Thr		
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<210> 16

<211> 802

<212> PRT

<213> Rattus norvegicus FGFR3IIIb

<400> 16

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 35          40          45
Phe Gly Ser Gly Asp Thr Val Glu Leu Ser Cys His Pro Pro Gly Gly
 50          55          60
Ala Pro Thr Gly Pro Thr Leu Trp Ala Lys Asp Gly Val Gly Leu Val
 65          70          75          80
Ala Ser His Arg Ile Leu Val Gly Pro Gln Arg Leu Gln Val Leu Asn
 85          90          95
Ala Thr His Glu Asp Ala Gly Val Tyr Ser Cys Gln Gln Arg Leu Thr
100          105          110
Arg Arg Val Leu Cys His Phe Ser Val Arg Val Thr Asp Ala Pro Ser
115          120          125
Ser Gly Asp Asp Glu Asp Gly Glu Asp Val Ala Glu Asp Thr Gly Ala
130          135          140
Pro Tyr Trp Thr Arg Pro Glu Arg Met Asp Lys Lys Leu Leu Ala Val
145          150          155          160
Pro Ala Ala Asn Thr Val Arg Phe Arg Cys Pro Ala Ala Gly Asn Pro
165          170          175
Thr Pro Ser Ile Pro Trp Leu Lys Asn Gly Lys Glu Phe Arg Gly Glu
180          185          190
His Arg Ile Gly Gly Ile Lys Leu Arg His Gln Gln Trp Ser Leu Val
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Met Glu Ser Val Val Pro Ser Asp Arg Gly Asn Tyr Thr Cys Val Val
210          215          220
Glu Asn Lys Phe Gly Ser Ile Arg Gln Thr Tyr Thr Leu Asp Val Leu
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Glu Arg Ser Pro His Arg Pro Ile Leu Gln Ala Gly Leu Pro Ala Asn
245          250          255
Gln Thr Ala Val Leu Gly Ser Asp Val Glu Phe His Cys Lys Val Tyr
260          265          270
Ser Asp Ala Gln Pro His Ile Gln Trp Leu Lys His Val Glu Val Asn
275          280          285
Gly Ser Lys Val Gly Pro Asp Gly Thr Pro Tyr Val Thr Val Leu Lys
290          295          300
Ser Trp Ile Ser Glu Asn Val Glu Ala Asp Ala Arg Leu Arg Leu Ala
305          310          315          320
Asn Val Ser Glu Arg Asp Gly Gly Glu Tyr Leu Cys Arg Ala Thr Asn
325          330          335
Phe Ile Gly Val Ala Glu Lys Ala Phe Trp Leu Arg Val His Gly Pro
340          345          350
Gln Ala Ala Glu Glu Glu Leu Met Glu Val Asp Glu Ala Gly Ser Val
355          360          365
Tyr Ala Gly Val Leu Ser Tyr Gly Val Gly Phe Phe Leu Phe Ile Leu
370          375          380
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385          390          395          400
Gly Leu Gly Ser Pro Thr Val His Lys Val Ser Arg Phe Pro Leu Lys
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Arg Thr Arg Leu Thr Leu Gly Lys Pro Leu Gly Glu Gly Cys Phe Gly
465      470      475      480
Gln Val Val Met Ala Glu Ala Ile Gly Ile Asp Lys Asp Arg Thr Ala
      485      490      495
Lys Pro Val Thr Val Ala Val Lys Met Leu Lys Asp Asp Ala Thr Asp
      500      505      510
Lys Asp Leu Ser Asp Leu Val Ser Glu Met Glu Met Met Lys Met Ile
      515      520      525
Gly Lys His Lys Asn Ile Ile Asn Leu Leu Gly Ala Cys Thr Gln Gly
      530      535      540
Gly Pro Leu Tyr Val Leu Val Glu Tyr Ala Ala Lys Gly Asn Leu Arg
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Glu Phe Leu Arg Ala Arg Arg Pro Pro Gly Met Asp Tyr Ser Phe Asp
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Ala Cys Arg Leu Pro Glu Glu Gln Leu Thr Cys Lys Asp Leu Val Ser
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Cys Ala Tyr Gln Val Ala Arg Gly Met Glu Tyr Leu Ala Ser Gln Lys
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Cys Ile His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Thr Glu Asp
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Asn Val Met Lys Ile Ala Asp Phe Gly Leu Ala Arg Asp Val His Asn
625      630      635      640
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Phe Lys Gln Leu Val Glu Asp Leu Asp Arg Ile Leu Thr Val Thr Ser
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Thr Asp Glu Tyr Leu Asp Leu Ser Val Pro Phe Glu Gln Tyr Ser Pro
      755      760      765
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<212> DNA

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<213> Rattus norvegicus FGFR3IIIC

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<211> 796

<212> PRT

<213> Pleurodeles waltlii FGFR3

<400> 26

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Phe	Leu	Pro 35	Gly	Asp	Ala	Ser	Leu 40	Val	Glu	Glu	Leu	Leu 45	Phe	Gly	Thr
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Val 65	Val	Trp	Phe	Lys	Asp 70	Gly	Ile	Ser	Val	Asp 75	Pro	Pro	Thr	Trp	Ser 80
His	Thr	Gly	Gln	Lys 85	Leu	Leu	Lys	Ile	Ile 90	Asn	Val	Ser	Tyr	Asp 95	Asp
Ser	Gly	Val	Tyr 100	Ser	Cys	Lys	Ala	Arg 105	Gln	Ser	Ser	Glu	Val	Leu	Arg
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Asp	Asp 130	Asp	Glu	Glu	Ser	Glu 135	Ser	Ala	Asn	Ala	Pro 140	Lys	Phe	Thr	Arg
Pro 145	Glu	Trp	Met	Glu	Lys 150	Lys	Leu	Leu	Ala	Val 155	Pro	Ala	Ala	Asn	Thr 160
Val	Arg	Phe	Arg	Cys 165	Pro	Ala	Ala	Gly	Lys 170	Pro	Thr	Pro	Ser	Ile	Thr
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<212> DNA

<213> Danio rerio FGFR3

<400> 27

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1440

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<213> Danio rerio FGFR3

<400> 28

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Lys	Leu	Ser	Lys	Phe	Pro	Leu	Lys	Arg	Gln	Val	Ser	Leu	Glu	Ser	Asn	
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770				775							780						
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